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**FACSIMILE TRANSMISSION****Date:** July 31, 2002**To:** Fred Micke/Verneta Simon

USEPA

Fax #: 312-353-9176

Timothy Ramsey

Piper Rudnick

Fax #: 312-630-7350

Pages being transmitted, incl. Cover: 8**CC:****Fax No.:****From:** Rich Berggreen**Phone:** 847-279-2500**Re:** 341 East Ohio Street Site

☐ Urgent ☐ For Signature ☐ For Review ☐ Please Comment/Reply ☐ As Requested ☒ Original to Follow

Message:

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July 31, 2002

Mr. Fred Micke, On-Scene Coordinator
Ms. Verneta Simon, On-Scene Coordinator
U. S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd., SE-5J
Chicago, Illinois 60604

RE: Pesticide Excavation and Verification Sampling, 341 E. Ohio Street Site, Chicago, Illinois – STS
Project No. 1-25585-XI, Task 2300, Correspondence No. 103

Dear Mr. Micke and Ms. Simon:

Attached please find for your reference a copy of a memorandum regarding pesticide excavation and verification sampling at the 341 E. Ohio Street Site in Chicago, Illinois. Note that this memorandum provides the field team with guidance for removal and verification sampling which is described in general terms in the Amended Removal Action Work Plan (Work Plan) and does not represent a revision or change to the Work Plan.


Because the work described in this memorandum does involve sampling and verification of the cleanup, we are requesting that upon demonstration in accordance with this memorandum that the soil meets the specified cleanup criteria for pesticides, USEPA provide signoff on the completion of this portion of the removal action in the applicable grid areas. We propose to provide USEPA with the pre-verification immunoassay results, the laboratory verification analytical results and a sign-off form for each grid area.


Obtaining USEPA sign-off will facilitate our ability to demonstrate completion of the Phase 1 excavation work (which includes removal of these pesticide-impacted soils) and compliance with the non-radiological remedial portion of the Work Plan.

Please contact us with any questions.

Regards,

STS CONSULTANTS, LTD.


John S. Esser, P.E., P.G.
Senior Project Engineer


Richard G. Berggreen, C.P.G.
Principal Geologist

cc: Tim Ramsey, Piper Rudnick

Enclosure



Memorandum

TO: Dumas Guerrier

cc: Tim Ramsey
Steve Kornder

FROM: John Esser, Richard Berggreen

DATE: July 26, 2002

RE: Pesticide Excavation and Verification Sampling
341 E. Ohio Street, Chicago, Illinois
STS Project No. 1-6-25585-XI, Task 2300

This memorandum is intended to describe procedures to be followed in the field to complete the excavation and verification sampling in the Pesticide Impact Area. This memorandum provides additional details for this portion of the removal action which is described in general terms in the Amended Removal Action Work Plan (Work Plan) and associated documents and is intended to be consistent with the general approach reflected in the Work Plan.

Pesticide Impact Area

The Pesticide Impact Area is defined on the basis of the previously completed soil borings and analytical sampling and is depicted in the attached Figure 1. Additional soil sampling and analysis will be performed during the removal action to further delineate continuous extensions of the Pesticide Impact Area depicted on Figure 1 the extent of pesticide impacts for the purpose of removing pesticide contaminated soil in the Pesticide Impact Area and any continuous extensions thereof that exceeds the Illinois Tier 1 residential remediation objective for ingestion and inhalation.

Excavation Sequence

The excavation sequence and procedures are defined in the Work Plan. In review, the excavation and removal sequence for subsurface soils are as follows:

1. Area 1/Area 2 - Phase 1 Radiological-Impacted Soil Removal
 - a. Remove pavement/gravel base course.
 - b. Perform Phase 1 removal of radiological-impacted soils.
 - c. Perform verification surveys/sampling of the excavation grade following Phase 1 removal of radiological-impacted soils in accordance with Work Plan.

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- d. USEPA Notification of Successful Phase 1 Verification Survey in accordance with Work Plan.
- e. At this point, it is anticipated that the excavation grade will likely be characterized as a hummocky with irregular topography. The excavation depths may vary from near zero (just below pavement/base course removal) to approximately 10 feet below grade. The soils exposed at the completion of Phase 1 radiological material removal may consist of urban fill or natural sand (in deepest portions of excavation).
- f. Note that it may be necessary during Phase 1 radiological material removal to excavate a limited amount of non-radiological soil for excavation access or excavation stability. Within the defined Pesticide Impact Area, these non-radiological soils will be loaded, transported, and disposed as pesticide-impacted soil in accordance with the procedures defined in the Work Plan.

2. Pesticide Impacted Soil Excavation

- a. Discretionary pesticide sampling (described later) will be used to further delineate the lateral and vertical limits of remaining soil with pesticide impacts above the Tier 1 clean-up objectives.
- b. Where pesticide concentrations exceed the Tier 1 objectives, soil will be excavated in 18-inch lifts to a depth based on the depth of the discretionary sampling. Radiological screening will be performed following excavation of each 18-inch lift of soil. Radiological-impacted soils will be managed and disposed in accordance with the Work Plan. Non-radiological-impacted soils that are impacted by pesticides above the Tier 1 clean-up levels will be managed and disposed as pesticide-impacted soils in accordance with the Work Plan.
- c. Excavation in 18-inch lifts will continue as deep as necessary to remove pesticide-impacted soil that exceeds the Tier 1 objective. Additional discretionary sampling can be used to guide the lateral and vertical limits of excavation.
- d. After discretionary sampling indicates that pesticide-impacted soils have been removed, pre-verification sampling (described later) will be performed.

Soil Sampling and Analysis for Pesticide Contamination

- 1. Discretionary Pesticide Sampling - Discretionary pesticide sampling will be used in the field at the direction of the Field Team Leader for the purpose of evaluating pesticide concentrations of in-situ soils in the vicinity of the original soil borings. Discretionary samples will be collected as grab samples from shallow test pits, grab samples from the excavation surface following Phase 1 radiological soil removal, and as composite samples taken over a vertical interval on the excavation sidewalls. The soil sample and analysis will be performed using the field immunoassay procedure (SOP 500). Discretionary sampling will be employed to aid in delineating the lateral and vertical extent of pesticide impacts. The results of the discretionary sampling will be used to aid in the excavation and management of pesticide-impacted soils.

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2. Pre-Verification Pesticide Sampling - Pre-verification pesticide sampling will be performed on a pre-specified grid pattern (for excavation floor samples) or a pre-specified horizontal spacing (for excavation sidewall samples) after soils exceeding the Tier 1 clean-up objective have been excavated.
 - a. Pre-Verification Grid Samples - The pre-verification sampling grid for these types of samples will be defined by 10-meter by 10-meter squares (see Figure 2) to yield an effective sampling area of 100 square meters per pre-verification sample. Each pre-verification grid sample will be prepared from a composite of five sub-samples collected from within the 10-meter by 10-meter sample area. The sub-sampling locations will be obtained by dividing the 10-meter by 10-meter sampling area into four equal quadrants measuring 5-meters by 5-meters. Four of the sub-samples will be collected from the center of the 5-meter by 5-meter quadrants. The fifth sub-sample will be obtained from the center of the 10-meter by 10-meter sample area. Sufficient soil volume will be obtained to allow pre-verification analysis and also subsequent laboratory analysis (if desired).
 - b. Pre-Verification Sidewall Samples - The excavation following completion of Phase 1 radiological soil removal and pesticide-impacted soil removal is anticipated to be characterized as a near-horizontal but irregular surface. In particular, it is possible that the excavation will not have distinct excavation sidewalls. Consequently, conventional "sidewall sampling" will not be possible and in that case the pre-verification grid sampling described above is expected to appropriately represent conditions in the sampled area. However, in the event that distinct excavation sidewalls are exposed following the removal of the pesticide-impacted soils, pre-verification sidewall samples will be collected. The pre-verification sidewall samples will be collected as a vertical composite of 5 sub-samples taken at equally spaced vertical intervals over the full height of the excavation sidewall. Additional pre-verification sidewall samples will be taken at a horizontal spacing of one per 10-meters of excavation sidewall. Sufficient soil volume will be obtained to allow pre-verification analysis and also subsequent laboratory analysis (if desired).
 - c. Sample Analysis - The pre-verification sample will be analyzed using the field immunoassay procedure (SOP 500).
 - d. Comparison to Clean-up Standard - The results of the pre-verification sample analyses will be compared to the compound-specific Illinois Tier 1 Residential Remediation Objectives for Ingestion and Inhalation listed below. In the event that the measured concentration in the pre-verification sample exceeds the applicable Tier 1 objective, pesticide excavation will resume in that area and the associated laboratory verification sample will not be submitted for laboratory analysis. Instead, pre-verification sampling will be repeated following the additional excavation.
3. Verification Pesticide Sampling - When the results of the pre-verification pesticide sampling and analysis for a given 100-square meter area and any applicable excavation sidewall samples are below the Tier 1 objective, verification samples will be submitted for laboratory pesticide analysis by STL St. Louis.

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- a. **Verification Grid Samples** - The sampling grid and sampling procedure for the verification grid samples will be identical to that of the pre-verification grid samples described above.
- b. **Verification Sidewall Samples** - If the excavation characteristics are such that they allow the collection of one or more pre-verification sidewall samples, verification sidewall samples will be collected for the same location(s). The sample spacing and sampling procedure for the verification sidewall samples will be identical to that of the pre-verification sidewall samples described above.
- c. **Soil Sampling Procedure** - The soil sample for laboratory verification sampling can be obtained as a split-sample from the pre-verification sample volume or as an independent sample collected from the same location and in the same manner as the associated pre-verification sample. All verification soil samples will be collected in laboratory-supplied sample containers and preserved in accordance with laboratory requirements for shipping to STL St. Louis.
- d. **Sample Analysis** - Verification soil samples will be analyzed for the seven pesticides listed in the Work Plan as well as 4,4-DDT (and provided in the table below) by STL St. Louis in accordance with the applicable requirements of the Quality Assurance Project Plan (QAPP). Test method will be SW-846 Method 8081A.
- e. **Comparison to Clean-up Standard** - The results of the verification sample laboratory analyses will be compared to the Illinois Tier 1 Residential Remediation Objectives for Ingestion and Inhalation listed below. In the event that a target pesticide concentration in the verification sample exceeds the applicable Tier 1 objective, pesticide excavation will resume in that grid area (in 18-inch lifts) and the area will be re-sampled.

Illinois Tier 1 Residential Remediation Objectives for Ingestion and Inhalation

The following Illinois Tier 1 residential standards are provided for reference in evaluating the verification sample laboratory analysis results.

Compound	Site-Specific Clean-up Objective (mg/kg)	Illinois Tier 1 Remediation Objective	
		Ingestion (mg/kg)	Inhalation (mg/kg)
Aldrin	0.04	0.04	3
alpha-BHC	0.1	0.1	0.8
Chlordane	1.8	1.8	72
Dieldrin	0.04	0.04	1
Heptachlor	0.1	0.1	0.1
Heptachlor epoxide	0.07	0.07	5
Lindane	0.5	0.5	--
4,4-DDT	2	2	--

DATE	7/23/02
BY	JSE
REVISION	7/23/02
BY	JSE

PESTICIDE IMPACT AREA
341 E. OHIO STREET PROJECT
CHICAGO, ILLINOIS



STS Consultants Ltd.
Consulting Engineers

STS PROJECT NO.
25585-XI
STS PROJECT FILE

AS SHOWN
FIGURE NO.
1

